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| 09/779,521 | 02/09/2001 | Mikio Koga | 010112 | 5354 |

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| EXAMINER | |
|---|---|
| THOMPSON, JAMES A | |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2624 | |

DATE MAILED: 04/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 09/779,521 | KOGA, MIKIO | |
| | Examiner | Art Unit | |
| | James A Thompson | 2624 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *20 December 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☐ Claim(s) _____ is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *30* is/are allowed.

6)☒ Claim(s) *11-13,16-20,23-25 and 28-29* is/are rejected.

7)☒ Claim(s) *14,15,21,22,26 and 27* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *09 February 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

## DETAILED ACTION

### *Response to Arguments*

1. Applicant's arguments filed 20 December 2004 have been fully considered but they are not persuasive.

Since all of the original claims 1-10 have been cancelled, and all new claims 11-30 have been added, the arguments regarding claims 1-10 are rendered moot.

### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless -
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 11-13, 16-20, 23-25 and 28 are rejected under 35 U.S.C. 102(b) as being anticipated by Bunce (US Patent 5,237,646).

**Regarding claims 11, 18 and 23:** Bunce discloses an apparatus (figure 2 of Bunce) comprising a plurality of templates (figure 2(74) and column 4, lines 19-26 of Bunce); a window array conversion unit (figure 2(52(portion)) of Bunce) that converts a data array of output data from an MxN window (figure 4(72) of Bunce) extracted from input data to a plurality of array conversion data patterns (figure 4(70) and column 4, lines 14-21 of Bunce); a pattern collation unit (figure 2(52(portion)) of Bunce) that collates the array conversion data pattern converted by the window array conversion unit with at least one of the templates, each of the templates including

reference patterns (column 4, lines 35-43 of Bunce); and a pattern collation control unit (figure 2(52 (portion)) of Bunce) that switches between the array conversion data patterns to collate with the template (column 4, lines 22-26 of Bunce), wherein the pattern collation control unit selects at least one of the templates based on a combination of mark dots and space dots from among a current dot of interest and its neighboring dots in the output data from the window (figure 6; figure 8; and column 5, lines 15-22 of Bunce).

The processor (figure 2(52) of Bunce) controls the overall operation of the apparatus (column 3, lines 28-30 of Bunce). The window array conversion unit, pattern collation unit, and a pattern collation control unit are each corresponding portions of said processor, along with the associated computer memory and physically embodied software.

Further regarding claim 18: The apparatus of claim 11 performs the method of claim 11.

Further regarding claim 23: Since a processor control the overall operation of the apparatus of claim 11, a storage medium readable by a computer, said storage medium storing a program of instruction executable by the computer to perform the steps listed in claim 23 is inherent.

**Regarding claim 12:** Bunce discloses that the pattern collation control unit selects at least one of the templates based on a combination of mark dots and space dots from among a current dot of interest and its right and left neighboring dots in the output data from the window (figure 6; figure 8; and column 5, lines 15-22 of Bunce). Since a 3x3 window (figure 4 (72) of Bunce) is compared with the stored templates (figure 6; figure 8; and column 5, lines 15-22 of Bunce), then said logic

combination of mark dots and space dots in said 3x3 window occurs among the current dot of interest (figure 2(62) and figure 4(72(center dot)) of Bunce) and its right and left neighboring dots (figure 4(72(bit positions to the left and right of the center bit position)) of Bunce).

**Regarding claims 13, 20 and 25:** Bunce discloses that the pattern collation control unit extracts a center dot (figure 2(62) and figure 4(72(center dot)) of Bunce) from an MxN dot array (3x3 window) (figure 4(72) of Bunce) in a window from the input data as the current dot of interest, together with the right and left dots both neighboring the current dot of interest (figure 6; figure 8; and column 5, lines 15-22 of Bunce) along with a direction of extraction (figure 4(78,84,86) and column 5, lines 16-18 of Bunce) which is the direction of image data collation (column 3, lines 64-67 and column 4, lines 2-5 of Bunce). Since a 3x3 window (figure 4 (72) of Bunce) is compared with the stored templates (figure 6; figure 8; and column 5, lines 15-22 of Bunce), then said pattern collation control unit extracts from said 3x3 window the current dot of interest (figure 2(62) and figure 4(72(center dot)) of Bunce) and its right and left neighboring dots (figure 4(72(bit positions to the left and right of the center bit position)) of Bunce), along with an associated direction (0°, 90°, 180°, 270°) in order to determine a template matching (column 5, lines 15-22 of Bunce).

**Regarding claim 16:** Bunce discloses an apparatus (figure 2 of Bunce) comprising an image processing unit (figure 2(52 (portion)) of Bunce) that extracts a window pattern having MxN dots (3x3 window) (figure 4(72) of Bunce) from an input image (column 4, lines 14-21 of Bunce); a plurality of templates (figure 2(74) and column 4, lines 19-26 of Bunce); a window

array conversion unit (figure 2(52(portion)) of Bunce) that converts a data array of the window pattern to a plurality of array conversion data patterns (figure 4(70) and column 4, lines 14-21 of Bunce); a pattern collation unit (figure 2(52(portion)) of Bunce) that collates the array conversion data pattern converted by the window array conversion unit with at least one of the templates, each of the templates including reference patterns (column 4, lines 35-43 of Bunce); a pattern collation control unit (figure 2(52 (portion)) of Bunce) that switches between the array conversion data patterns to collate with the template (column 4, lines 22-26 of Bunce); and a pattern correction unit (figure 2(52(portion)) of Bunce) that corrects the window pattern based on a result by the pattern collation unit (column 4, lines 35-43 of Bunce), wherein the pattern collation control unit selects at least one of the templates based on a combination of mark dots and space dots from among a current dot of interest and its neighboring dots in the output data from the window (figure 6; figure 8; and column 5, lines 15-22 of Bunce).

The processor (figure 2(52) of Bunce) controls the overall operation of the system (column 3, lines 28-30 of Bunce). The image processing unit, window array conversion unit, pattern collation unit, a pattern collation control unit, and pattern correction unit are each corresponding portions of said processor, along with the associated computer memory and physically embodied software.

**Regarding claim 17:** Bunce discloses that said image processing unit extracts the window pattern (figure 4(72) of Bunce) from bitmap data (figure 2(60) of Bunce) expanded from an input image (column 3, lines 49-52 and column 4, lines 14-21 of

Bunce). The 3x3 window (figure 4(72) of Bunce) is extracted from a larger input window (figure 2(60) and column 4, lines 14-21 of Bunce). Said larger input window is pixel data from the input image, and thus bitmap data (column 3, lines 49-52 of Bunce).

**Regarding claims 19, 24 and 28:** Bunce discloses collating the array conversion data patterns with the templates by referencing patterns in a single direction (column 5, lines 15-26 of Bunce). The 90°, 180° and 270° rotated versions of a pattern (figure 4(78,84,86) of Bunce) do not need to be stored (figure 6 and column 5, lines 22-26 of Bunce) but can be accessed through rotation logic (figure 4 and column 5, lines 15-21 of Bunce). Therefore, only a single direction (0°) of the template pattern (figure 4(94) of Bunce) is referenced by the input 3x3 window pattern.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bunce (US Patent 5,237,646) in view of Fukushima (US Patent 5,282,059).

**Regarding claim 29:** Bunce discloses that said pattern collation control unit switches between the array conversion

patterns (figure 4(78,84,86,94) of Bunce) to collate with the template (column 5, lines 15-22 of Bunce).

Bunce does not disclose expressly that said switching is performed on a time division basis.

Fukushima discloses performing switching of image data processing on a time-division basis (column 13, lines 61-65 of Fukushima). Outputting the processed data is performed by switching between the encoders on a time division basis (column 13, lines 61-65 of Fukushima).

Bunce and Fukushima are combinable because they are from the same field of endeavor, namely digital image data processing. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to perform said switching taught by Bunce on a time-division basis, as taught by Fukushima. The motivation for doing so would have been to improve the rate at which said array conversion data can be output from said pattern collation control unit. An increase in data transmission when there are several output units that can be switched between is a well-known benefit of time-division switching. Therefore, it would have been obvious to combine Fukushima with Bunce to obtain the invention as specified in claim 29.

***Allowable Subject Matter***

6. Claims 14-15, 21-22 and 26-27 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

The first template group, second template group, and third template group, each consisting of the various associated elements specifically recited in claim 14, were not found in a search of the prior art. The templates found in the closest prior art were generally two-dimensional window-based templates, such as disclosed in Bunce (US Patent 5,237,646).

Claims 21 and 26 contain the same limitations as claim 14 and therefore also contains allowable subject matter.

Claims 15, 22 and 27 are dependent upon claims 14, 21 and 26, respectively. Claims 15, 22 and 27 therefore also contain allowable subject matter.

7. Claim 30 is allowed.

The following is an examiner's statement of reasons for allowance:

Claim 30 incorporates *inter alia* the limitations recited in claim 14 and is therefore allowable for the same reasons given for claim 14 above in item 6.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

***Conclusion***

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James A Thompson whose telephone number is 571-272-7441. The examiner can normally be reached on 8:30AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David K Moore can be reached on 571-272-7437. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

James A. Thompson
Examiner
Art Unit 2624

JAT
12 April 2005

THOMAS D. LEE
PRIMARY EXAMINER